

ANATOMICAL MANIKINS¹

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THE Chinese appear to have been the first to have employed anatomical manikins, not only for instructing students in the structure of the body as known to them, but also for teaching the art and practice of acupuncture. There are several of these manikins in the Wellcome Historical Medical Museum which are of considerable antiquity. One is a bronze figure 33 cm. in length, the head, body and limbs of which are perforated with ninety small holes in certain places to show where the acupuncture needles should be inserted in the treatment of various diseases. It is said to be of the fourteenth or fifteenth century.

An interesting Chinese manikin is carved in dark wood and probably dates from the early sixteenth century; it represents the head and body, and is 8.50 cm. in length. The internal organs shown are the lungs and liver, which are carved in a flower-like form common in Chinese anatomical drawings of this period; the heart is carved out of the solid, and the colon, intestines, kidneys and bladder are also shown. The spinal column is fashioned in detail.

Another of these manikins represents the figure of a man carved in ivory 9 cm. in height, and probably dates from the late fifteenth century. The body is divided into two parts by a line from the crown of the head to the feet. The right side is graved with straight and curved lines with ideographs in certain places, indicating the parts of the body for the insertion of the acupuncture needles.

In Europe ivory anatomical manikins were known from the early part of the seventeenth century. The first met with represents a female figure in a recumbent position 15 cm. in length, mounted on an ebonised base. The arms are movable, and hinged to the body with wooden pegs. The upper part of the body is made to open, and when lifted discloses the viscera with movable models of the intestines, uterus and kidneys, which in this particular specimen are imperfect; the other internal organs are missing.

Some of these anatomical manikins are found in pairs representing male and female. The following pair are larger than the former specimen, and measure 16 cm. in length. Each is mounted on a wooden block in the shape of a bier covered with old crimson silk velvet; the heads rest on a square pillow carved in ivory, with a pierced border to imitate lace. The internal organs in these manikins are more complete, the male having the liver,

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stomach, kidneys and part of the heart, and the female the foetus in utero and the lungs in addition to the former organs.

In the collection of these manikins now in the Wellcome Historical Medical Museum, some are mounted on biers covered with silk or velvet, while others are enclosed in stamped leather cases, lined with silk or soft leather, for the purpose of being carried about. They probably date from the early seventeenth to the eighteenth century, and from a careful comparison of the workmanship of the carving with other ivories I have come to the conclusion that some were made in France and others in Italy. It is probable that they were the work of the craftsmen who carved the figures of Christ that are to be found on the crucifixes of the time. On studying the various features of these manikins they will be found to fall into two distinct groups. First, those in which the head of the male represents that of an old man, with attenuated features and a grave expression; the arms, legs and removable parts being well executed, while the corresponding female manikin has the hair drawn back from the forehead. The head is usually small in proportion to the body, but otherwise the carving and modelling is good.

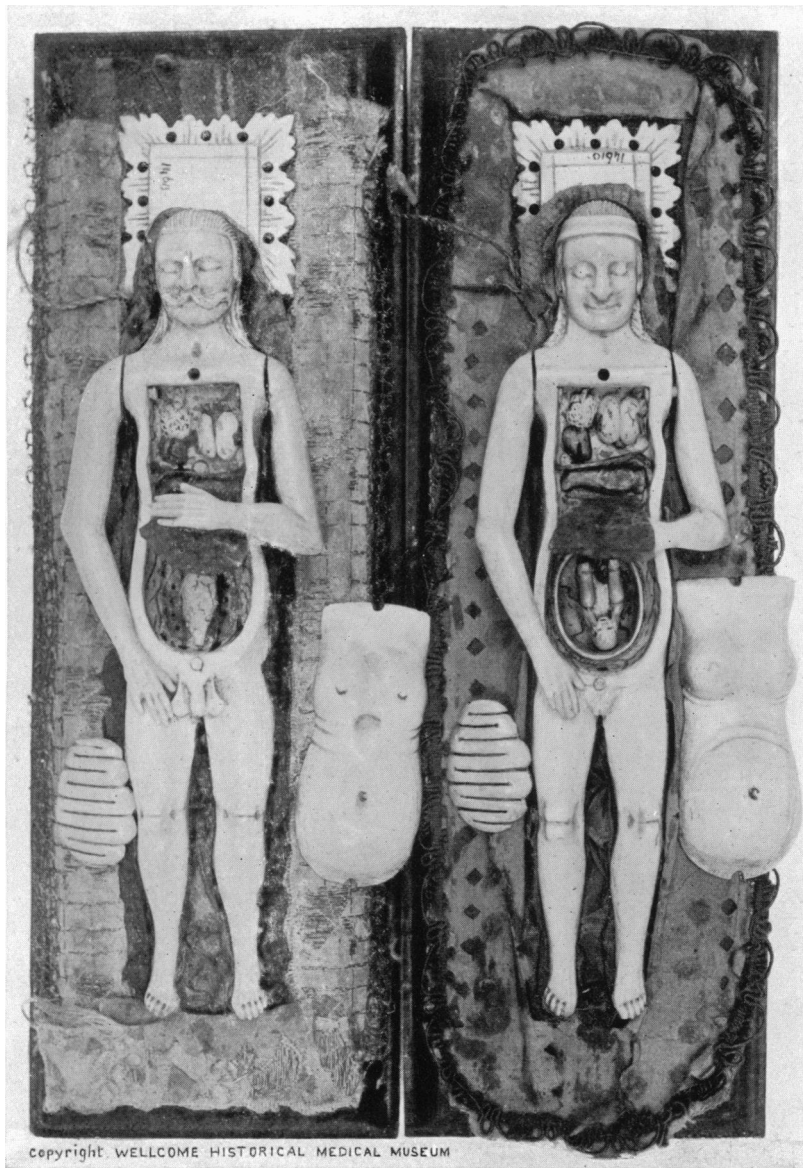
The second group of manikins have distinct features and are quite Italian in character. The heads of the males are larger and broader and they are usually represented with long hair and heavy curling moustaches. The carving of the Italian figures is not so artistic and is cruder than those I believe to be of French origin. The female manikins of the Italian type are often represented smiling; the hair is brushed back, and confined by a bandeau, while the features have distinct characteristics and are quite different from the French type. In some of these specimens the arms are movable, being attached to the shoulders by wooden pegs, in others they are rigid, and joined to the body. In all the specimens the upper part of the trunk may be lifted off, disclosing the viscera. The modelling of the organs varies very considerably in these figures, and seems to have been largely left to the ideas of the carver. Some are very conventional, while others are more natural. Veins and arteries are drawn in colour, and in some of the manikins the liver, heart and other organs are stained red. In every case the intestines are removable, and beneath, in the male figures, is found the bladder, and in the female the foetus in utero, the cord being represented by a red silk thread.

Perhaps the most interesting pair of these ivory manikins, male and female, are enclosed in a beautifully stamped brown leather case of the seventeenth century. It is lined with an old French paper decorated with a design in various colours, resembling the petals of flowers. The figures, which measure 20 cm. in length, recline on beds covered with blue silk edged with gold braid. The heads rest on blue silk cushions bordered with gold braid, and have pieces of pink ribbon at the corners. The position of the arms in these specimens is different from the others, the right arm being carved out of the solid ivory and extended down the right side, while the left is also straight, but movable from the shoulder. The viscera of the male figure is divided into two parts

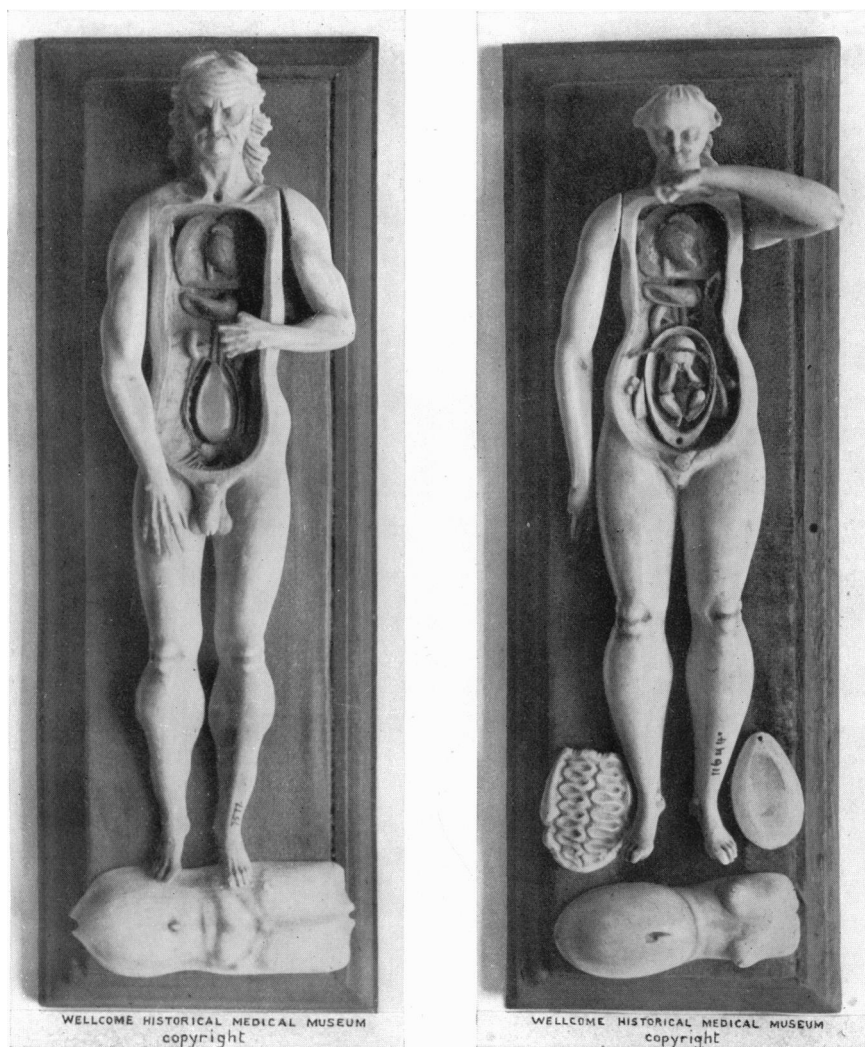
by a kind of shelf representing the diaphragm. In the upper part are models of the heart, suspended by pink silk thread, and the lungs. Below the diaphragm there is the stomach, kidneys, descending aorta and the bladder. An attempt has been made at drapery over the left thigh in this model, which is unusual in these figures. The female figure is rather longer, and measures 20·50 cm. in length. The left arm is carved in the solid and joins the body, while the right is movable. The viscera is divided in the same manner as in that of the male figure, but the internal organs are better modelled; the heart is enclosed by the lungs, which are hinged with pink silk. Below the diaphragm the stomach, kidneys, bladder and uterus are all represented. Veins and arteries are painted in thin red lines, and the foetus is well carved, the cord being represented by red silk thread.

Another pair of these ivory manikins worth describing is the most perfect in the collection, and I believe are of Italian workmanship. Each figure fits into a separate case measuring 26 cm. by 10 cm., the outsides being covered with old leather. The insides and lids are lined with chamois leather stained red and edged with gold braid. The male figure is mounted on a loose bier covered with old blue silk with a pattern of flowers, and decorated with tinsel in squares. The heads rest upon ivory pillows with borders carved to represent lace. The face of the male manikin is of the Italian type, broad, with flowing moustaches, the hair being long and brushed back from the forehead. Both arms are movable from the shoulder, and in the cavity practically all the organs are indicated, some being coloured red, while the veins are shown by red lines. The heart is well modelled, the lungs being kept in position by two pieces of thin red silk and the intestines are covered with an apron of membrane. The internal organs of the female manikin are coloured in the same manner, and although conventionally represented, they are well modelled. In this specimen an attempt has been made to show the pancreas and colon; the uterus is large, and contains the foetus in a normal position, to which is attached a thin red cord. The bier on which the female manikin reclines is covered with red silk which is perforated with small diamond shaped holes, with a blue silk edging. The head is raised, and the face is represented smiling, with the eyes closed; the hair is brushed back, and round the forehead is a bandeau.

The most remarkable manikin in the collection is one representing a woman, carved in marble. It measures 19·50 cm. in length, and is mounted on a wooden bier or table with four legs 7·50 cm. high, 20 cm. long and 5·50 cm. wide. The table is covered with a pall made of tin, coloured crimson, with a gold edging resembling braid. The head rests on a marble pillow, but the face is unlike any of the other specimens, the hair being parted in the centre and falling to the shoulders on each side of the head. The arms are movable, the left being slightly bent, while the right is flexed and rests on the abdomen. The internal organs are carved in marble and movable; an attempt has been made to represent the sternum and ribs, on removing which the heart and



Ivory Anatomical Manikins, Male and Female, 17th century, probably Italian.



Ivory Anatomical Manikins, Male and Female, 17th century, probably French.

lungs are disclosed. A small foetus carved in marble with a silk cord attached is fitted into the uterus, over which lie the intestines.

The question has often been asked, why were these manikins made, and for what purpose were they employed. Some believe they were made simply as models of human anatomy, and like the Anatomical Fugitive Sheets, were fashioned for the curious and not for purposes of instruction. The problem would have been difficult to solve had it not been for a document which was found by Dr Capparoni in a case containing one of the manikins which supplies us with an answer beyond conjecture. The script is in old French, of which the following is a translation:

In Life's full bloom, when labour's toil so near
My fellow sufferers' lot and perils I do fear,
Come ye fair pupils, Lo, I cast aside my shame
That Midwif'ries secrets may reveal my frame.
Pierce it with keen enquiring eye, and may
The child and mother's nature then convey
New manifold devices to your skillful art
That pining women may not henceforth smart
Through cruel untaught efforts, and not gasp
With their unborn in Death's unpitying grasp.

“Written by Joseph Fuardi de Fossau, Professor at Verceil during the vacations of 1786, who had been struck by the extreme ignorance of those persons who practised midwifery and the bad effects which often ensued from it.... He was ashamed that his pupils in surgery should not be better taught, and he constructed this figure for the purpose described in the above lines.”

From this it is obvious that the female ivory manikins were used for instruction to teach students and midwives the anatomy of the body, and to demonstrate to them the position of the internal organs.